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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF

HIROYUKI MIYACHI ET AL

: EXAMINER: ANDERSON, R. L.

SERIAL NO: 10/049,904

FILED: FEBRUARY 20, 2002

; GROUP ART UNIT: 1626

FOR: SUBSTITUTED BENZYLTHIAZOLIDINE-
2,4-DIONE DERIVATIVES

DECLARATION UNDER 37 C.F.R. §1.132

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

Now comes Koji Murakami who deposes and states:

Now comes _____
1. That I am a graduate of Tokyo College of Pharmacy and
received my Ph.D. degree in the year 2000.

2. That I have been employed by
Kyorin Pharmaceutical Co., Ltd.
_____ for 16 years as a Researcher
_____ in the field of Pharmacology.

3. That the following comparison was carried out by me or under my direct supervision and control.

4. That I am familiar with the present application, its prosecution history, the outstanding rejections over the cited references.

5. That I am familiar with the pending claims in the present application.

6. That I hereby state that the following remarks regarding procedure, result generation, and data interpretation is done so to the best of my knowledge in the related technical field and that I have read and understand all information herein.

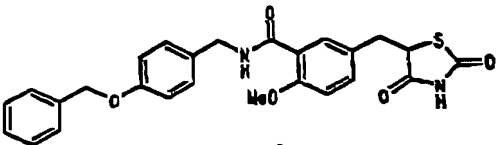
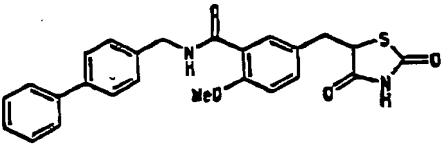
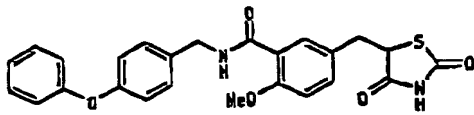
The comparative experimental data, which are requested by the Examiner, have been prepared as described under.

The present invention submits the compound having agonist activity of human peroxisome proliferator-activated receptor (PPAR) and has been developed on the expectation of exhibiting lipid-lowering action based on agonist activity of PPAR alpha in addition of blood sugar-lowering action

based on agonist activity of PPAR gamma. That is, the present invention has developed a dual agonist capable of activating PPAR alpha and gamma.

In Table 2 of the present specification, it is described that the Example compounds of the present invention show the strong transactivation to the both of PPAR alpha and gamma in addition to the activation of PPAR alpha. The data of transactivation of the present compound are transferred from the specification as under.

(Table A) Transactivation of the present compound

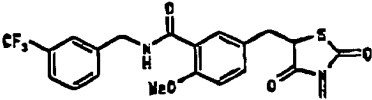
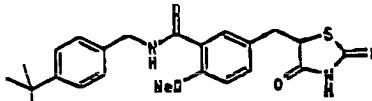
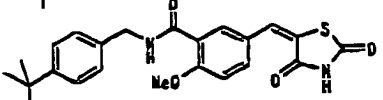
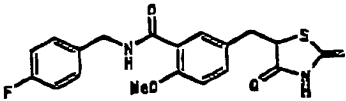
Example No.	Structure	Transactivation	
		PPAR α	PPAR γ
		EC ₅₀ (μ mol/L)	EC ₅₀ (μ mol/L)
1		0.44	-
2		0.63	6.8
3		0.24	0.24

From this result, it is demonstrated that the compounds wherein A in the general formula (1) of the present invention denotes benzyloxy group, phenyl group or phenoxy group have the activation action to PPAR alpha and the compounds of Examples 2 and 3 have also the activation activity to PPAR gamma.

Next, the tested result of the transactivation by the same experiment concerning Examples 17, 22, 23, 28 of the cited reference EP 0 846 698 is

shown below (the data of Example 33 is also requested, but the data thereof could not be derived, because the amount of said sample was too small therefor).

(Table B) Transactivation of the cited reference compounds

Example No.	Structure	Transactivation	
		PPAR α	PPAR γ
		EC ₅₀ (μ mol/L)	EC ₅₀ (μ mol/L)
17		>10	0.18
22		>10	0.23
23		>10	0.50
28		>10	0.20

As this result, the cited reference compounds, although strong in activation to PPAR gamma, are considered to be very weak in activation to PPAR alpha, because it is not recognized in the level of 10 micro-mol/L. The cited reference compounds are mainly the agonist of PPAR gamma.

On the other hand, it is obvious that the present invention compounds significantly have the activation to PPAR alpha and/or have significantly the activation to PPAR gamma in addition to that to PPAR alpha.

The present invention compounds are the alpha agonist and/or the dual agonist having activating PPAR alpha and/or the both of PPAR alpha and gamma.

Accordingly, the present invention compounds are expected to exhibit lipid-lowering action based on PPAR alpha together with blood sugar-lowering action based on PPAR gamma.

Our comment

The present invention concerns the compound having agonist activity of human peroxisome proliferator-activated receptor (PPAR) and has developed a dual agonist which can activate PPAR alpha and gamma with expecting the manifestation of lipid-lowering action based on PPAR alpha agonist together with blood sugar-lowering action based on PPAR gamma agonist (a part of them is the compound of not being dual). Comparing the PPAR activation data of the cited reference with the activation data of the present invention, we can demonstrate the existence or the non-existence of PPAR alpha activity. The present invention compounds which are strong in activating both of PPAR alpha and gamma are expected to exhibit the effect on the aspect of lowering function of lipid, which have the excellent characteristics in comparison with the cited reference compounds.

7. The undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

8. Further deponent saith not.


Signature

20/08/2003
Date